of feeling-tones only. And while such pictures are easily available their application is limited, for they are usually regarded by observers as pleasant or indifferent, seldom distinctly unpleasant. Their use is thus confined almost wholly in one direction, viz., that of esthetics. It is quite desirable to secure material capable of stimulating a wide range of feelings if we would make appreciable progress in their study. It appears that the advent of the picture postcards with their standard size, well-nigh endless variety and low price have more than supplied the experimental deficiencies of the classic pictures. The picture postcards make an appeal to the whole gamut of human affections. The technique for experimental purposes consists in selecting, adapting and in manipulating the cards so as to bring specific feelings into relief. To indicate uses as well as difficulties a few examples are submitted. The emotions that may be produced under laboratory conditions will always be rather feeble and so difficult to describe. The difficulty may be partially overcome by the use of picture postcards as material, some appropriate device for exposure and the law of dissociation as a method. According to James[11] the law of dissociation by varying concomitants holds for feelings as well as for sensations. The law states:

> What is associated now with one thing and now with another tends to become dissociated from either, and to grow into an object of abstract contemplation.

By alternating one picture with various others it is possible to bring to notice obscure feeling responses that would otherwise go unreported, *e. g.*, if a picture of children at play is alternated with that of a beautiful woman; it is often hard for an observer to say anything further than that the pictures seem to go well together. But if the picture of a drunkard be substituted for that of the woman, not only does the disgust at the new combination serve for an interesting study, but the former feelings can now be more readily described. We are thus furnished with a key to discover which feelings inhibit each other, which reinforce each other by contrast, and which fuse into one of a more general attitude. In short we are on the road to an analysis and synthesis of feelings.

The feelings aroused by the senses that respond to the stimuli of the outer or external world are usually objectified, *i. e.*, referred to the source of stimulation. For this reason observers are often at an utter loss to give an account of their attitude or to describe their feelings in response to a picture.[12] The psychologist's only refuge here is to call for repeated descriptions of the picture and to interpret the description in psychological terms. It is not difficult to devise conditions for readily repeating observations of the cards, and thereby enable the observer to carry the description a little farther each time. These descriptions, when carefully made, not only reveal the observers' feelings and attitudes but demonstrate the way in which apperception depends upon attitudes. These studies with the picture postcards have a practical bearing upon certain problems such as the order in which pictures should be hung in galleries, and the proper sequence and time exposure of lantern slides in illustrated lectures.

LINUS W. KLINE,
CHESTER E. KELLOGG

[11] "Psychology, Briefer Course," p. 251.

[12] G. Santayana, "The Sense of Beauty."

## SOCIETIES AND ACADEMIES

### THE ILLINOIS ACADEMY OF SCIENCE

THE seventh annual meeting of the Illinois Academy of Science was held in the engineering building of the Northwestern University, at Evanston, February 19 and 20, 1914, under the presidency of Frank W. DeWolf, director of the State Geological Survey. At the Friday session the following addresses were given:

"Recent Investigations of the Mineral Resources of the Country," by the president.

"Earth Tides," by Professor A. A. Michelson.

"The International Phytogeographical Excursion," by Professor H. C. Cowles.

"Recent Theories of Fertilization and Parthenogenesis," by Professor F. R. Lillie.

At 6:30 the members of the academy were entertained at dinner by Northwestern University. This was followed by a reception in the physical laboratory given by the local chapter of Sigma Xi.

At the Saturday meeting the following papers were presented by members of the academy:

"A Unified Science Course for High Schools," by Harold B. Shinn.

"Agricultural Science in the High Schools of Illinois," by A. W. Nolan.

"Reaction of Fishes to Temperature," by W. M. Wells.

"Soil Moisture and Plant Succession," by G. D. Fuller.

"The Vacuum Arc in Spectroscopy," by G. V. McCauley.

"Postglacial Biota of Glacial Lake Chicago," by F. C. Baker.

"Behavior Agreement Among the Animals of a Community," by V. E. Shelford.

"Evaporation and Soil Moisture in Forests and Cultivated Fields," by J. F. Groves.

"On Conditions Under Which the Vegetal Matter of the Coal Beds of Illinois Accumulated," by T. E. Savage.

"Comparative Analysis of Text-books of Zoology," by E. R. Downing.

"Recent Views Concerning Electrical Conduction in Solutions," by L. I. Shaw.

"Preliminary Note on the Cyclonic Distribution of Weather Elements for Davenport, Iowa," by A. D. Udden.

"Water Control at Evanston," by W. Lee Lewis.

At the business meeting it was decided to hold the next meeting at Springfield, February 18 and 19, 1915. The officers for the ensuing year are: *President,* Dr. A. R. Crook, Director State Museum, Springfield; *Vice-president,* Professor U. S. Grant, Northwestern University, Evanston; *Secretary,* Dr. E. N. Transeau, Eastern State Normal School, Charleston; *Treasurer,* Professor J. C. Hessler, Millikin University, Decatur.

EDGAR N. TRANSEAU,
*Secretary*

## THE BIOLOGICAL SOCIETY OF WASHINGTON

THE 519th meeting was held in the assembly hall of the Cosmos Club, January 10, 1914, with President Paul Bartsch in the chair. Five new members were elected. The discussion on parallel development was continued. L. Stejneger spoke on parallelism as exhibited in reptiles, while Barton W. Evermann and Theodore Gill discussed it as related to fishes. Messrs. Eastman, Bartsch, A. D. Hopkins and William Palmer also took part in the discussion.

The 520th meeting was held January 24, 1914, with President Bartsch in the chair. Five persons were elected to membership. The program consisted of three communications:

"Winter Bird-life in the Swamps of Alabama," by E. G. Holt.

"Pollen Protection in the Flowers of *Acacia* and *Anona,*" by W. E. Stafford.

"The Problem of the Gliding Gull," by William Palmer.

The 521st meeting was held February 7, 1914, President Bartsch in the chair. One new member was elected. Two communications were presented:

"Notes on the Fossil Mammals of the Fort Union," by J. W. Gidley.

"Certain Seeds Used for Ornamental Purposes in the West Indies," by J. N. Rose.

The 522d meeting was held February 21, 1914, Vice-president J. N. Rose in the chair.

The program consisted of three communications:

"Seasonal Movements of Fishes at Lake Maxinkuckee," by Barton W. Evermann.

"An American Swastika," by Henry Talbott.

"Surface Temperature in the Humboldt Current and its Coastal Eddies," by R. E. Coker.

The 523d meeting was held March 7, 1914, with Vice-president A. D. Hopkins in the chair. Three persons were elected to membership. The program consisted of two communications:

"Remains of a Prehistoric Feast," by William Palmer.

"Further Evidence of Mutation in *Œnothera*" (illustrated with lantern slides), by H. H. Bartlett.[1]

The 524th meeting was held March 21, 1914, with President Bartsch in the chair. Two new members were elected. Two communications were presented:

"Arabic Interpretations of the Songs of Birds," by Paul B. Popenoe.

"Bird Migration in the Mackenzie Valley" (illustrated with lantern slides), by Wells W. Cooke.

D. E. LANTZ,
*Recording Secretary*

[1] To be published in *Journal of Agricultural Research.*